

**CHEM 2461 Organic Chemistry Laboratory**  
**Syllabus for Winter Quarter 2016**

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**Office Hours:** MWRF 10 - 11 AM in Olin 232 or by appointment

**Text:** Organic Chemistry Lab, CHEM 2461, 2462, 2463 by Joseph Hornback

**Objectives.** You will perform a series of well-planned experiments to practice important organic chemistry laboratory techniques and to gain an appreciation for the rewards and challenges associated with hands-on experimental work.

**General.** Lab is scheduled 2:00 – 5:50 PM or 6:00 – 9:30 PM on MTWR. Each lab session begins with an introduction to the experiment to be done that day so be on time. Attendance will be taken.

Read the **Introduction** (pp 1-6) and **A Guide to Success in the Organic Chemistry Lab** (pp. 6-9) in the lab text before coming to the first lab in January.

The schedule of experiments is on the last page of this syllabus. Read the assigned pages in the lab manual, complete the BYB (Before You Begin) assignment, and prepare your lab notebook before coming to the lab. With this advance preparation and good time management, you will be able to complete the lab work in the allotted time. Clean your glassware before leaving the lab.

**Lab Notebook.** You are required to have a bound, 10 1/8 x 7 7/8, quadrille-ruled lab notebook. This is available in the bookstore (item # 000193799) for \$4. **The instructions for setting up and maintaining the notebook are available on Canvas.**

**BYB Assignments.** The BYB assignments are specified in the schedule. These assignments must be completed in the laboratory notebook. Your TA will verify that the BYB assignment is completed and correct before you can begin work in the lab each week.

For experiments with procedures posted on Canvas, you must bring your laptop or a hard copy of the procedure to the lab. Students who do not have the procedure will lose BYB points (10).

**Reports.** Read **Appendix III, pp. 383 – 387** in the lab text.

We will use a slightly modified version of the description in the lab text. The report for each experiment must be typewritten and all structures must be drawn using a structure drawing program such as ChemSketch or MarvinSketch. The report should include: Title of the Experiment, Your Name and Date, Introduction (statement of the problem and any applicable chemical equations), Observations, Data, Calculations, Results, Discussion, Conclusions, and Exercises (the answers to Exercises assigned in the syllabus). Excluding the data, calculations, and graphs, the report should be a maximum of two pages. The Discussion section should not exceed one page. Be concise!

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Report due dates are provided in the schedule on page 3 of this syllabus. Submit an electronic copy of the report on Canvas before coming to lab on the report due date. Then submit a paper copy of the report to your TA at your lab start time (2 PM or 6 PM) on the due date. The affirmation below, your signature, and the date should appear on the top of page 1 of every report.

I have submitted a copy of this report on Canvas. \_\_\_\_\_  
Signature Date

Late reports are penalized 30%. Reports more than one week late will not be accepted. (For example, for a report due 2/1, if the report is turned in 2/2 – 2/8 it is late (30% off). The report will not be accepted after 2/8.)

Reports which have been plagiarized will receive a grade of zero.

**Products.** The product should be turned in for the experiments specified in the schedule. Your TA will specify the product check procedure.

**Grading.** Your grade is based on a total of 775 points, distributed as follows:

Task	Point Value	Points
Before You Begin assignments	10 per exp	70
Products	10 per sample	80
Lab reports	75 per exp	525
Lab notebook	100	100

**Graded Document Retention.** All graded materials will be returned. Graded materials that are still in the TA's possession on the last day off classes of Spring Quarter 2015 will be recycled.

**Housekeeping.** The labs are routinely inspected. Points (10) will be deducted from all students in the section for each instance where the lab housekeeping is unacceptable or safety rules have been violated.

**Cell phones and Laptops.** Cell phones can be used in the lab 1) for calculations and 2) to take pictures used in lab reports. All texting/conversations on cell phones should be done in the hallway. Laptops can be used in the lab 1) to prepare a lab report and 2) to communicate with TA's on lab or lecture questions. If use of a cell phone or laptop creates a distraction, it is the TA's responsibility to address and correct the problem.

**Safety.** Read pp. 11-20 in the lab text.

*Accidents can happen in any laboratory, even in laboratories staffed with highly experienced scientists. The potential for an accident in our laboratory is minimized by 1) advance planning, 2) careful attention to the details of your own work, and 3) an awareness of what other students are doing around you. If you have any questions, ask. That is what we are here for!*

## CHEM 2461 Organic Chemistry Laboratory

### Lab Safety Rules (in effect at all times):

1. No students are allowed in the lab unless the TA is present.
2. Only students assigned to that lab section are allowed in the lab.
3. After the TA prelab lecture, safety glasses must be worn at all times.
4. Protect your skin with proper attire. Wear 1) the gloves provided, 2) a sleeved shirt to protect your arms, and 3) long pants and closed-toed shoes.  
You will not be allowed in the lab wearing shorts or open-toed shoes.
5. Coats should be stored on coat hooks or in packs. Packs should be stored where they will not be a trip hazard.
6. Absolutely no food or drink is permitted. Store water bottles out of sight in your pack.
7. No open flames.
8. Inspect all glassware before using. Replace glassware that is chipped or cracked.
9. Read and reread the label on a chemical container before using a chemical.
10. Never put chemicals back in the stock bottle.
11. Close all chemical containers immediately after use.
12. Clean up all chemical spills (bench, balance table, hoods) immediately.
13. Avoid contact of chemicals with your clothing.
14. Avoid breathing chemical fumes by working in the hoods provided.
15. Use the chemical disposal procedures specified by your TA.
16. No chemicals, glassware, or equipment are to be removed from the lab.
17. No unauthorized experiments.
18. When you are finished in the lab for the day, thoroughly wash hands with soap and warm water in the Olin washroom before leaving the building.

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**Schedule of Experiments**

Exp	Week	Reading pp.	Special Instructions	Exercises	Product turned in	Report due week
1	1/4	377-379  37-42	Check equipment names in Appendix I as you check in.  BYB assignments 1, 3 Use 0.200 g of unknown.  Software on Canvas	2, 3ab, 4	yes	1/18
2	1/11 1/18	43-51	BYB assignments 1 – 3 <b>MLK Holiday</b> Reports 1 and 2 are due. Turn in notebooks for status check as instructed by TA.	1, 4	yes	1/18
3	1/25	53-60	BYB assignments 1 – 3 Distill product week of 1/25 GC analysis week of 2/1	2, 4	yes	2/8
4	2/1	Canvas	BYB assignments 1 – 4  <b>Experiment 4</b> <a href="#">Work with a partner.</a> GC analysis week of 2/8	1, 2	yes x 2	2/15
5	2/8	Canvas	BYB Assignments 1, 2  <b>Experiment 5</b> <a href="#">Work with a partner.</a> GC analysis week of 2/15	1 – 3	yes	2/22
6	2/15	Canvas	BYB assignments 1, 2  <b>Experiment 6</b>	1, 2	no	2/22
7	2/22	Canvas	BYB assignments 1 – 3  <b>Experiment 7</b>	1 – 3	yes x 2	3/7
	2/29		Complete <b>Experiment 7</b> isolations and analysis			
	2/29		Clean equipment, confirm the drawer key/combination with TA, and check out.			
	3/7		<b>Turn in notebook by 5 PM on 3/9/2016</b>			